

CLAIMS

1. An optically detectable data encoding layout for a surface, the data encoding layout including:
 - a primary lattice;
 - a secondary lattice formed in the interstitial areas formed by the primary lattice;
 - one or more secondary markings located on points on the secondary lattice, wherein the data is encoded according to the positions of the secondary markings on the secondary lattice.
2. An optically detectable data encoding layout for a surface as claimed in claim 1 wherein the primary lattice is defined by a plurality of primary markings, each located at the vertices of the primary lattice.
3. An optically detectable data encoding layout for a surface as claimed in claim 1 wherein the data encoding corresponds to location encoding which specifies the physical location of the secondary marking on the page.
4. An optically detectable data encoding layout for a surface as claimed in claim 3 wherein the physical location of the secondary marking on the page corresponds to a location in a logical page-space, the logical page-space defined by the largest unique page area which is possible given the specific location encoding.
5. An optically detectable data encoding layout for a surface as claimed in claim 1 wherein the primary lattice is a regular substantially square lattice, rectangular, triangular or other regular lattice shapes.
6. An optically detectable data encoding layout for a surface as claimed in claim 5 wherein the primary and/or secondary markings are dots having no intrinsic optically distinguishable structure.

7. An optically detectable data encoding layout for a surface as claimed in claim 5 wherein the primary and/or secondary markings have an intrinsic structure which allows additional data to be encoded therein.
8. An optically detectable data encoding layout for a surface as claimed in claim 1 wherein the pitch of the primary and/or the secondary lattice varies depending on the physical position of the lattice point at a particular point on the page.
9. An optically detectable data encoding layout for a surface as claimed in claim 8 wherein such primary and/or secondary lattice pitch variation is discontinuous or alternatively the variation may be progressive.
10. An optically detectable data encoding layout for a surface as claimed in claim 8 wherein the primary and/or secondary lattice pitch variation is such that a reading device, detecting and decoding the marks within a specified field of view, is able to detect and compensate for the pitch variation so as to distinguish the primary and secondary lattice.
11. An article incorporating data encoded information including a data encoding layout as claimed in any one of claim 1.
12. A method of encoding data onto a surface including the steps of:
 - applying a primary lattice to the surface
 - applying data encoding markings in payload regions which are defined by the interstitial areas between lattice points of the primary lattice, wherein the primary lattice specifies a reference coordinate system for evaluating the positions of the data encoding markings in the payload regions.
13. A method as claimed in claim 12 wherein the data corresponds to location data such that if the markings are imaged and decoded, the decoded data represents the position of the imaged area on the page.

14. A method as claimed in claim 12 wherein the encoded data is digitized data wherein when a plurality of the markings are imaged, the digitized data can be reconstructed from the decoded data.